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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,680	11/20/2003	Lewis R. Norman	2003-IP-009800U1	8569

7590 12/01/2008
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EXAMINER

WHITE, EVERETT NMN

ART UNIT	PAPER NUMBER
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1623

MAIL DATE	DELIVERY MODE
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12/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/717,680	Applicant(s) NORMAN ET AL.	
	Examiner EVERETT WHITE	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-7 and 34-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3, 5-7 and 34-39 is/are allowed.
- 6) ☒ Claim(s) 40-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 18, 2008 has been entered.

2. The amendment filed September 18, 2008 has been received, entered and carefully considered. The amendment affects the instant application accordingly:

- (A) Claims 4 and 8-33 have been canceled or previously canceled;
- (B) New Claims 35-45 have been added;
- (C) Claim 1 has been amended;
- (D) Comments regarding Office Action have been provided drawn to:
 - (I) 103(a) rejection, which has been withdrawn since the claims have been amended to recite a derivatized polysaccharide having 2,2'-bipyridine as the bidentate ligand.

3. Claims 1-3, 5-7 and 34-45 are pending in the case.

4. The text of those sections of Title 35, U. S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 40-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Morgan (US Patent No. 2,520,609).

Applicants claim a method of crosslinking a polysaccharide comprising the steps of: (a) providing a metal coordinating group having a reactive site, (b) derivatizing a polysaccharide with the metal coordinating group to produce a derivatized polysaccharide having bidentate ligands that comprise at least one bidentate ligand selected from the group consisting of: ethylenediamine; dithiocarbamate; 2,2'-bipyridine; 1,10-phenanthroline; or 8-hydroxyquinolino; and any combination thereof, and (c) crosslinking the derivatized polysaccharide having bidentate ligands with a metal ion to form a metal ligand coordination complex.

The Morgan patent discloses a process wherein a hydroxyethylcellulose acetate chloroacetate is crosslinked using a crosslinking agent that may be selected as sodium diethyldithiocarbamate or zinc dibutyldithiocarbamate (see example 1 and sections (a) and (b) of the Table in Example 1 of the Morgan patent), which anticipate the instant claims when the polysaccharide of the instant claims is a hydroxyethylcellulose, when the metal coordinating group of the instant claims is a dithiocarbamate, and when the metal ion of the instant claims is sodium or zinc in the Morgan patent. See column 5, line 17 of the Morgan patent wherein the phrase "copper ditolydithiocarbamate" is disclosed as an example of a dithiocarbamate derivative, wherein the term "copper" anticipates the recitation of "copper" in instant Claim 42 and the term "ditolydithiocarbamate" anticipates the "dithiocarbamate" recited in instant Claim 40.

7. Claims 40 and 42-45 are rejected under 35 U.S.C. 102(e) as being anticipated by Lai (US Patent No. 6,649,591 B2).

Applicants claim a method of crosslinking a polysaccharide comprising the steps of: (a) providing a metal coordinating group having a reactive site, (b) derivatizing a polysaccharide with the metal coordinating group to produce a derivatized

polysaccharide having bidentate ligands that comprise at least one bidentate ligand selected from the group consisting of: ethylenediamine; dithiocarbamate; 2,2'-bipyridine; 1,10-phenanthroline; or 8-hydroxyquinolinato; and (c) crosslinking the derivatized polysaccharide having bidentate ligands with a metal ion to form a metal ligand coordination complex.

The Lai patent discloses a polydithiocarbamate-macromolecule-containing compositions which is prepared using a method that comprises contacting a dithiocarbamate with a macromolecule in the presence of a crosslinking agent under crosslinking conditions selected to preserve the dithiocarbamate linkage, wherein the composition is capable of forming a complex with iron (see the abstract and column 6, 1st paragraph of the Lai patent). See column 9, line 6 of the Lai patent wherein the macromolecule may be selected as a polysaccharide. This description of the Lai patent anticipates instant Claims 40, 42, 43 and 45 of the instant application. The subject matter of instant Claim 44 with recites "step (c) occurring within a wellbore in a subterranean formation" is noted, but is not viewed as being distinct from the occurrence of the cross-linking procedure described in the Lai patent since the method, per se, is described in the Lai patent. Location of a cross-linking step does not appear to be distinct from the crosslinking step, per se, since the claims are drawn to a method.

Allowable Subject Matter

8. Claims 1-7 and 34-39 are allowed.

Reason for Indicating Allowable Subject Matter

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclosed or suggest a method of crosslinking a polysaccharide having bidentate ligands that comprises 2,2'bipyridine.

Summary

10. Claims 1-7 and 34-39 are allowed; Claims 40-45 are rejected.

Examiner's Telephone Number, Fax Number, and Other Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is 571-272-0660. The examiner can normally be reached on 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Everett White/
Examiner, Art Unit 1623

/Shaojia Anna Jiang/
Supervisory Patent Examiner, Art Unit 1623